68612

Alkylation of Phenol by Isobutylene With Homogeneous and Heterogeneous Catalysts

S/020/60/130/05/022/061
B011/B005

atmospheric pressure. In this case, the yield in p-tert.-butyl phenol is 56% of the theoretical one representing a maximum while the liquid products are formed in a minimum quantity. In further experiments, the catalyst was periodically regenerated for 3 h between working cycles of 90 h (at 500°, then blown through with air for 3 h). Table 3 shows the activity of the catalyst under these conditions. It changed relatively slightly. There are 4 tables.

SUBMITTED: July 13, 1959

Card 3/3

5.3831
5.3700(C)
5(2), 5(3)

68815
S/020/60/131/01/029/060
B011/B006

AUTHORS: Topchiyev, A. V., Academician, Prokhorova, A. A., Paushkin, Ya. M., Kurashev, M. V.

TITLE: Investigations in the Field of Boron Compounds. Oxidative Polymerization of Triallylboron

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 131, Nr 1, pp 105-108 (USSR)

ABSTRACT: The authors investigated the polymers formed on the basis of triallylboron (Ref 5) and tested the catalytic activity of triallylboron in the polymerization of unsaturated hydrocarbons. If triallylboron is prepared in a nitrogen current insufficiently purified from oxygen, solid yellowish polymers are formed. As can be seen from table 1, the latter contain boron and oxygen. The authors systematically tested the polymerization of triallylboron by atmospheric oxygen at room temperature, as well as in isopropylbenzene and in tert-butylbenzene at 130° by N_2+O_2. The polymer was also obtained by addition of benzoyl peroxide or H_2O_2. The oxidation by N_2+O_2 was intended to explain the polymerization mechanism of tri-

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allylboron (see scheme). A similar scheme was suggested by S. N. Danilov and O. P. Koz'mina (Ref 6). The authors' scheme fully confirmed the conclusions of these investigators. It is known that the threedimensional polymers formed are insoluble, non-swelling and infusible products. The properties of the polymers prepared by the authors were of this type. The polymer can be separated into a soluble and an insoluble component by treatment with 10% KOH. This can also be effected by heating with CCl_4 or with tetrahydrofuran. The analyses of the polymer fractions are given in table 2. The authors found that triallylboron is an active catalyst for the polymerization of methyl methacrylate. The reaction proceeds under intense liberation of heat, yielding a solid transparent block after only 1 - 1.5 h. Polymer yield is 86%. Since boron was not detected in the analysis (Table 3), triallylboron does evidently not give copolymers. Figure 1 shows the dependence of polymethylmethacrylate viscosity on the concentration. Triallylboron has no noticeable effect on the polymerization of styrene, except that it somewhat inhibits the process. The

polystyrene yields obtained on adding various amounts of catalyst are shown in figure 2. The viscosity of the polystyrene prepared in this manner decreases considerably (Fig 3). Triallylboron is (5 mol%) inactive in the polymerization of acrylonitrile and vinyl acetate (Table 3). The authors mention G. S. Kolesnikov, L. S. Fedorova (Ref 4). There are 3 figures, 3 tables, and 6 references, 3 of which are Soviet.

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR (Institute of Petroleum-chemical Synthesis of the Academy of Sciences, USSR)

SUBMITTED: October 1, 1959

Card 3/3

TOPCHIYEV, A.V., akademik; PAUSHKIN, Ya.M.; PROKHOROVA, A.A.; FRENKIN, E.I.; KURASHEV, M.V.

Studies in the field of boron compounds. New derivatives of triallylborane. Dokl.AN SSSR 134 no.2:364-367 S '60. (MIRA 13:9)

1. Institut neftekhimicheskogo sinteza Akademii nauk SSSR.
(Boron compounds)

TOPCHIYEV, A.V.; KURASHEV, M.V.; PAUSHKIN, Ya.M.

Effectiveness of various catalysts in the alkylation of phenol by isobutylene. Izv. AN SSSR. Otd. khim. nauk no.2:307-311 F '61. (MIRA 14:2)

1. Institut neftekhimicheskogo sinteza AN SSSR.
(Phenol) (Catalysts) (Propene)

TOPCHIYEV, A.V., akademik; KURASHEV, M.V.; GAVRILENKO, I.F.

Alkylation of aromatic hydrocarbons. Alkylation of naphthalene by propylene on an aluminisilicate catalyst at moderate temperatures. Dokl. AN SSSR 139 no.1:124-127 Jl '61. (MIRA 14:7)

1. Institut neftekhimicheskogo sintoza AN SSSR.
(Naphthalene) (Propene)

32430
S/020/61/141/006/016/021
B103/B147

5.2410

AUTHORS: Topchiyev, A. V., Academician, Prokhorova, A. A., and Kurashev, M. V.

TITLE: Investigations in the field of boron compounds. Synthesis and properties of tri-(ω-styryl) boron

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 141, no. 6, 1961, 1386-1387

TEXT: The synthesis of tri-(ω-styryl) boron (I) is described, which was obtained by reacting trifluoroboron etherate with the corresponding Grignard reagent at 40 - 45°C. In tetrahydrofuran solution, I was obtained with a yield of about 76% in a dry argon stream at a ratio of Mg: C_8H_7Br:$(C_2H_5)_2O{\cdot}BF_3$ = 7:3:2. The ratio of reagents is important. At elevated temperatures, the yield in I decreases considerably owing to the formation of diphenyl butadiene. The crystals of I are needle-shaped or columnar (m.p. 64 - 65°C). If the reaction mixture is treated with pyridine, a complex, $(\omega\text{-}C_8H_7)_3B{\cdot}C_5H_5N$, is formed (needle crystals, soluble in chloroform, decomposition temperature 138 - 140°C). If I is

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Investigations in the field of...

synthesized in a nitrogen stream, the complex $[(C_6H_5CH{=}CH_2)_4]MgBr$ (II) forms, which crystallizes from tetrahydrofuran with two molecules, and from sulfuric-ether solutions with three molecules of the solvent. On heating, II loses the solvent and decomposes at about 300°C under formation of styrene and a carbonlike residue. In air, II does not melt, but is covered with a white incrustation. The crystals of II melt at 88 - 90°C (with decomposition). With water, II reacts vigorously to form styrene, boric acid, and MgBrOH. ω-styryl boric anhydride is obtained by treating the reaction mixture according to V. A. Sazonova and N. Ya. Kronrod (ZhOKh, 26, 1876 (1956)) and by subsequent drying of the crystals. Treatment of II with HCl gas results in the isolation of I. Similar results are obtained by interaction of Grignard's reagent with BBr_3.

The different results obtained with argon and nitrogen are explained by the ability of argon to form coordination compounds with BF_3. The coordination compound of argon with I is unstable and is completely dissociated to the components under the experimental conditions. There are 3 references: 1 Soviet and 2 non-Soviet. The reference to the

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3240

Investigations in the field of... S/020/61/141/006/016/021
B103/B147

English-language publication reads as follows: H. S. Booth, K. S. Willson, J. Am. Chem. Soc., 57, 2273 (1935).

SUBMITTED: October 2, 1961

Card 3/3

KURASHEV, P.I. (g. Dzhalal-Abad Kirgizskoy SSR)

Intermittent atelectasis in pulmonary cancer. Klin.med. 34 no.12: 59-62 D '56. (MLRA 10:2)

(ATELECTASIS, etiol. and pathogen.
intermittent atelectasis in lung cancer)
(LUNG NEOPLASMS, compl.
intermittent atelectasis)

KURASHEV, R.I.

X-ray diagnosis of gas gangrene. Vest.rent. i rad. 31 no.2:84-86 Mr-Ap '56. (MLRA 9:8)

(GAS GANGRENE, diagnosis
x-ray (Rus))

KURASHEV, R.I. (Moskva)

Generalized hyperplastic periostitis. Klin.med. 35 [i.e.34] no.1 Supplement:27 Ja '57. (MIRA 11:2)
(BONES--DISEASES) (JOINTS--DISEASES)

KURASHEV, R.I.

Pitch bezoar of the stomach (pixobezoars). Vest. rent. i rad. 32 no.1:25-28 supplement '57 (MLRA 10:5)
(BEZOARS, case rep.
pixobezoars, x-ray diag.)

KURASHEV, R.I.

Congenital bilateral deformity of the thumb and big toe.
Vest. rent. i rad. 32 no.1:42-44 supplement '57 (MLRA 10:5)
(FINGERS AND TOES, abnorm.
bilateral deform.)

KURASHEV, R.I. (Kirgizskaya SSR. g. Dzhalal-Abad, p/otd. 13, ul. Stalina, d.35, kv.4)

Hypertrophic osteoarthropathy in pulmonary cancer [with summary in English]. Vop.onk. 4 no.1:107-110 '58. (MIRA 11:4)
(OSTEOARTHROPATHY, HYPERTROPHIC PULMONARY, complications.
cancer of lung (Rus))
(LUNG NEOPLASMS, complications,
osteoarthropathy, hypertrophic pulm. (Rus))

KURASHEV, R.I., PROTOPOPOV, A.N. (Moskva)

Congenital pollex varus. Ortop.travm. i protez. 19 no.4:53 Jl-Ag '58 (MIRA 11:11)
(THUMB—ABNORMITIES AND DEFORMITIES)

KURASHEV, R.I.

X-ray diagnosis of Meckel's diverticulum. Vest.rent. i rad. 33 no.2: 93-94 Mr-Ap '58. (MIRA 11:6)
(MECKEL'S DIVERTICULUM, diag.
x-ray diag. (Rus))

KURASHEV, R.I. (Dzhalal-Abad, Kirgizskoy SSSR, p/o 13).

Unusual congenital anomaly of the hand. Arkh.anat., gist. i embr. 35 no.5:114-115 S-O '58 (MIRA 11:12)
(WRIST, abnorm.
unusual case (Rus))

KURASHEV, R.I.

Rare congenital defect of the development of the wrist. Ortop.travm. i protez. 20 no.8:66 Ag '59. (MIRA 12:11)
(WRIST, abnormalities)

KURASHEV, R.I.

Biphalangia of all the toes of the foot. Ortop.travm.i protez. 20 no.9:72-73 S '59. (MIRA 13:2)
(TOES, abnorm.)

KURASHEV, R.I. (g.Dzhalag Abad, ul. Stalina, d.35, kv.4)

Reversive anomaly of the frontal bone in modern man. Arkh. anat. gist. i embr. 36 no.5:79-82 My '59. (MIRA 12:7)

1. Bol'nitsa No.3 Dzhalal-Abadskoy obl., Kirgizskoy SSR.
(FRONTAL BONE, abnorm.
supraciliary projection (Rus))

KURASHEV, R.I.

Total atelectasis of the lung as a sequel to bronchoadenitis.
Pediatriia 23 no. 5:62-64 My '60. (MIRA 14:1)
(LUNGS—COLLAPSE) (BRONCHI—DISEASES)

KURASHEV, R.I.

Anomaly of the large thoracic muscle in radiographic representation. Vest.rent.i rad. 35 no.1:68 Ja-F '60. (MIRA 13:6)
(THORAX abnorm.)

KURASHEV, R.I. (Kirgizskaya SSR, Dzhalal-Aban, ul. Stalina, d.35, kv.4)

Total pulmonary atelectasis in rib fracture. Vest.khir. 85 no.12: 104-105 D '60. (MIRA 14:1)
(LUNGS--COLLAPSE) (RIBS--FRACTURE)

KURASHEV, R.I.

Atelectasis of the lungs in rib fractures. Khirurgiia 38 no.12:40-42 D '62. (MIRA 17:6)

SEREBRYAKOV, N.; KURASHEV, V.; SMIRNOV, A.

Present-day status and ways to improve the establishment of work norms in petroleum production. Sots. trud 6 no.6: 63-69 Je '61. (MIRA 16:8)

KURASHEV, V.A., redaktor; MIKOAELYAN, I.T., redaktor; RATYNSKIY, Yu.K., redaktor; GOLYAKOV, P.A., redaktor; NEVYADOMSKIY, Yu.M., redaktor; VODOLAGINA, S.D., tekhnicheskiy redaktor.

[Manual of time standards for equipment repair in oil refineries] Spravochnik norm vremeni na remont apparatury masloochistnykh zavodov. Moskva, Gos.nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, 1947. 54 p. (MIRA 8:4)

1. Moscow. TSentral'nyy nauchno-issledovatel'skiy institut mekhanizatsii i organizatsii truda v neftyanoy promyshlennosti. (Petroleum--Refining)

PA 9T93

KURASHEV, V. A.

Jun 1947

USSR/Oil Industries
Oil production

"On the Progressive Norms in the Petroleum Industry," V. A. Kurashev, P. A. Golyakov, 2 pp

"Neftyanoye Khozyaystvo" Vol 25, No 6

General discussion of increasing the standards of production required now because of improved technology, in accordance with the Stalin Five-Year Plan.

9T93

KURASHEV V A

MASHINSKIY, Iosif Aronovich, inzhener; SOPIN, Vsevolod Ivanovich, kandidat tekhnicheskikh nauk; KURASHEV, V.A., redaktor; LOZBYAKOVA, Ye.S., vedushchiy redaktor; SHIKIN, S.T., tekhnicheskiy redaktor

[Manual for norm setters in oil refineries] Spravochnik normirovshchika na neftepererabatyvaiushchikh zavodakh. Moskva, Gos. nauchno-tekhn. izd-vo neftianoi i gorno-toplivnoi lit-ry, 1956. 202 p. (MLRA 10:1)

(Petroleum--Refining--Production standards)

BAKULIN, Vladimir Georgiyevich; KURASHEV, V.A., redaktor; VATOLIN, G.N., vedushchiy redaktor; KHLEBNIKOVA, L.A., tekhnicheskiy redaktor

[Experience in introducing progressive work methods in oil well drilling] Opyt vnedreniia peredovykh metodov truda v burenii. Moskva, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry, 1957. 50 p. (MLRA 10:9)
(Oil well drilling)

KURASHEV, V.; SEREBRYAKOV, N.; SMIRNOV, A.

Influence of automatic processes in petroleum production on the organization of labor. Sots.trud 4 no.8:48-53 Ag '59. (MIRA 13:1)
(Oil fields--Production methods)
(Automation)

KURASHEV, V.; SEREBRYAKOV, N.

Session of the normative and research organizations on labor in the oil industry. Biul.nauch.inform.: trud i zar.plata no.5: 53-55 '59. (MIRA 12:6)
(Petroleum industry--Production standards)

AUTHORS: Frunze, T. M., Korshak, V. V., Kurashev, V.V., Kolesnikov, G. S., Zhubanov, B. A. SOV/62-58-6-26/37

TITLE: On Some Phosphorus-Containing Polyamides (O nekotorykh fosforsoderzhashchikh poliamidakh)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye khimicheskikh nauk, 1958, Nr 6, pp. 703 - 705 (USSR)

ABSTRACT: In order to explain the influence exercised by the phosphorus atom upon the properties of polyamides a number of polymers was obtained by the polycondensation of bis-(p-carboxyphenyl) phenylphosphinoxides with various aliphatic and aromatic diamines. The initial acid was obtained by the authors according to the following scheme:

$$p\text{-}CH_3C_6H_4MgBr \xrightarrow{+C_6H_5PCl_2} (CH_3C_6H_4)_2\,PC_6H_5 \xrightarrow{+Br_2\ \ 2NaOH} \rightarrow (CH_3C_6H_4)_2\,P(O)C_6H_5 \xrightarrow[H_2O+C_5H_5N]{KMnO_4} (HOOCC_6H_4)_2\,P(O)C_6H_5.$$

Polycondensation took place under the usual conditions (Ref 1). From the results mentioned (Tables 1,2) it may be seen that

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On Some Phosphorus-Containing Polyamides SOV/62-58-6-26/37

with the lengthening of the carbon chain of diamine from tetramethylene to decamethylene diamine softening-temperatures are reduced. At the same time, fluctuation becomes weaker. There are 2 tables and 6 references, 4 of which are Soviet.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental-organic Compounds AS USSR)

SUBMITTED: January 27, 1958

1. Amides--Chemical properties 2. Phosphorus--Chemical effects
3. Condensation reactions

Card 2/2

FRUNZE, T.M.; KORSHAK, V.V.; KURASHEV, V.V.

Phosphorous organic polymers. Part 6: Polyamides of some phosphorus-containing dicarboxylic acids. Vysokom.soed. 1 no.5:670-676 My '59. (MIRA 12:10)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Amides) (Acids, Organic)

FRUNZE, T.M.; KORSHAK, V.V.; KOZLOV, L.V.; KURASHEV, V.V.

Phosphorous organic polymers. Part 7: Mixed phosphorus-containing polyamides. Vysokom.soed. 1 no.5:677-681 My '59. (MIRA 12:10)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Amides)

5 (3)

AUTHORS: Korshak, V. V., Corresponding Member AS USSR, Frunze, T. M., Kurashev, V. V., Alybina, A. Yu. SOV/20-126-6-35/67

TITLE: On Some Characteristic Features of the Non-equilibrium Polycondensation (O nekotorykh osobennostyakh neravnovesnoy polikondensatsii)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 6, pp 1270 - 1273 (USSR)

ABSTRACT: This paper, the experimental part of which was worked out with the assistance of P. A. Aliyevskiy gives only part of the results obtained. A detailed description will be published later. The equilibrium polycondensation (Ref 1) which takes place under the interaction of diamines (Ref 1) is characterized by several characteristic features among them by the reversibility both of the main reaction of the polymer synthesis (see scheme) as well as the accompanying conversions (of the exchange reactions) which take place simultaneously (Ref 2). Such exchange reactions, which have mostly destructive character, take place between the growing polyamide molecules at the expense of the end groups as well as of the amide bonds in the macromolecule

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(Ref 3). They bring about a certain, rather close distribution of the forming polymer according to the specific weights (Ref 4). The exchange reactions lead to the fact that in the equilibrium polycondensation a state occurs which is denoted as "polycondensation equilibrium" (Ref 5). The excess of one of the reaction products disturbs this equilibrium and influences the molecular weight of the formed product (Ref 6, Fig 2). The present investigation was carried out in order to determine whether these dependences change if the polycondensation is carried out as a non-equilibrium process. As an example of such a reaction the interaction between dicarboxylic acid chlorides with diamines may be used (see scheme). If this reaction is carried out at the boundary between two phases by dissolving the initial substances in two liquids which do not mix with each other (Ref 7), then it takes place very rapidly also at low temperatures i.e. under conditions at which no counter reactions occur. The authors investigated the reaction between hexamethylene diamine with alkali addition and adipinic acid chloride. It may be seen from figure 1 that the optimum con-

 centration which leads to high yields in the production of

high-molecular products is the 0.15 mol/l solution. Both reagents were solutions of the same concentration. In order to solve the problem of the effect of the ratio of the initial substance on the molecular weight of the forming polymers a test series was carried out in which either the one or the other initial substance formed an excess. In spite of large excesses the obtained polyamides had practically no equal molecular weights (Table 1). In the case of an equilibrium polycondensation, in the reaction of dicarboxylic acids with diamines (Fig 2) this excess produces strong effects. In this case, the factor which interrupts the reaction and the growth of the chain is the formation of a polyamide film on the separation surface of the phases through which the initial reagents may not diffuse. An addition of butyric acid chloride to the solution of the initial acid chloride in benzene considerably reduces the molecular weight of the forming polyamide (Figs 3 and 4). A polymer, which has groups incapable of reaction, at the two ends, looses the capability of a further growth. There are 4 figures, 1 table, and 7 references, 6 of which are Soviet.

On Some Characteristic Features of the Non-equilibrium Polycondensation SOV/20-126-6-35/67

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental-organic Compounds of the Academy of Sciences, USSR)

SUBMITTED: April 17, 1959

Card 4/4

FRUNZE, T.M.; KORSHAK, V.V.; KURASHEV, V.V.; ALIYEVSKIY, P.A.

Heterochain polyamides. Part 22: Effect of certain factors on the process of formation of the polyamide in a two-phase system. Vysokom.soed. 1 no.12:1795-1800 D '59.
(MIRA 13:5)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Polyamides)

83811

15.8114 also 2209

S/190/60/002/005/001/015
B004/B067

AUTHORS: Korshak, V. V., Frunze, T. M., Kurashev, V. V.

TITLE: From the Field of the Heterochain Polyamides. XXIII. Polycondensation of the Oxide of Bis-(p-carboxyphenyl)phenylphosphinyldichloride With Hexamethylenediamine in the Interface

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 5, pp. 633-635

TEXT: In earlier papers (Refs. 1-3) the authors studied the polycondensation of phosphorous polyamides with aliphatic and aromatic diamines in the melt. The present paper describes the polycondensation of the oxide of bis-(p-carboxyphenyl)phenylphosphinyldichloride in the interface. The authors found that by mixing a solution of the phosphorus compound in benzene with a solution of hexamethylenediamine and KOH in water, a polyamide film is formed in the interface, which may be extracted as a continuous twist. In mixing the solutions the polyamide was precipitated as a white powder. The yield was 72 - 92%. The relative viscosity was determined at 20°C in tricresol. A figure shows the relative viscosity as

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From the Field of the Heterochain Polyamides. XXIII. Polycondensation of the Oxide of Bis-(p-carboxyphenyl)phenylphosphinyldichloride With Hexamethylenediamine in the Interface

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B004/B067

a function of the initial concentration of the reagents. A maximum value of about 0.88 was attained at 0.01 mole/l. At higher concentrations viscosity increased. Table 1 compares the polymers obtained in the melt (relative viscosity = 0.42, tensile strength 530 kg/cm^2) with those obtained in the interface (relative viscosity = 0.88, tensilve strength = 700 kg/cm^2). Table 2 presents yields and viscosities of the polyamides as a function of the concentration of the reagents. The viscosity decrease with rising concentration is explained by a premature chain rupture due to hydrolysis of the terminal acid chloride groups. There are 1 figure, 2 tables, and 6 references: 5 Soviet, 2 US, and 1 British.

ASSOCIATION: Institut elementoorganicheskikh soyedinenly AN SSSR (Institute of Elemental-organic Compounds of the AS USSR)

SUBMITTED: December 18, 1959

Card 2/2

KORSHAK, V.V.; FRUNZE, T.M.; KURASHEV, V.V.; SEROVA, K.L.

Heterochain polyamides. Part 28: Significance of acceptors of hydrochloric acid in the synthesis of polyamides by interfacial polycondensation. Vysokom. soed. 3 no.2:205-207 F '61. (MIRA 14:5)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Polyamides)

KORSHAK, V.V.; FRUNZE, T.M.; VINOGRADOVA, S.V.; KURASHEV, V.V.; LEBEDEVA, A.S.

Heterochain polyamides. Part 29: Significance of the hydrolysis of dichlorides of dicarboxylic acids during interphase polycondensation. Vysokom.soed. 3 no.3:371-375 Mr '61. (MIRA 14:6)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Polyamides) (Condensation products (Chemistry))

KORSHAK, V.V.; VINOGRADOVA, S.V.; FRUNZE, T.M.; LEBEDEVA, A.S.; KURASHEV, V.V.

Heterochain polyesters. Part 31: Role played by the hydrolysis of aromatic dicarboxylic acid chlorides in the process of interfacial polycondensation. Vysokom.soed. 3 no.7:984-990 Jl '61. (MIRA 14:6)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Hydrolysis) (Isophthaloyl chloride)
(Terephthaloyl chloride) (Polymerization)

KOZLOV, L.V.; KURASHEV, V.V.

On the boundary between two phases. Priroda 50 no.7:99-101 Jl '61. (MIRA 14:6)

1. Institut elementoorganicheskikh soyedineniy AN SSSR, Moskva.
(Polymers and polymerization)

KURASHEV, V. V.

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PHASE I BOOK EXPLOITATION SOV/6034

Konferentsiya po khimii i primeneniyu fosfororganicheskikh soyedineniy. 2d, Kazan', 1959.

Khimiya i primeneniye fosfororganicheskikh soyedineniy; trudy (Chemistry and Use of Organophosphorus Compounds; Conference Transactions) Moscow, Izd-vo AN SSSR, 1962. 630 p. Errata slip inserted. 2800 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Kazanskiy filial.

Resp. Ed.: A. Ye. Arbuzov, Academician; Ed. of Publishing House: L. S. Povarov; Tech. Ed.: S. G. Tikhomirova.

PURPOSE: This collection of conference transactions is intended for chemists, process engineers, physiologists, pharmacists, physicians, veterinarians, and agricultural scientists.

COVERAGE: The transactions include the full texts of most of the scientific papers presented at the Second Conference on the Chemistry and Use of

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Chemistry and the Use of Organophosphorus (Cont.) SOV/6034

Organophosphorus Compounds held at Kazan' from 2 Nov through 1 Dec 1959. The material is divided into three sections: Chemistry, containing 67 articles; Physiological Activity of Organophosphorus Compounds, containing 26 articles; and Plant Protection, containing 12 articles. The reports reflect the strong interest of Soviet scientists in the chemistry and application of organophosphorus compounds. References accompany individual reports. Short summaries of some of the listed reports have been made and are given below.

TABLE OF CONTENTS: [Abridged]:

KORSHAK, V.V.; FRUNZE, T.M.; VINOGRADOVA, S.V.; KURASHEV, V.V.; LEBEDEVA, A.S.

Role of acid chloride hydrolysis of some alophatic and aromatic dicarboxylic acids in the process of interfacial polycondensation. Izv. AN SSSR.Otd.khim.nauk no.10:1807-1813 O '62. (MIRA 15:10)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Acids, Organic) (Chlorides) (Hydrolysis)
(Polymerization)

IZYNEYEV, A.A.; KORSHAK, V.V.; FRUNZE, T.M.; KURASHEV, V.V.

Preparation of polymers by polycyclization. Report No.2: Study of the formation of polybenzimidazoles. Izv. AN SSSR Ser.khim. no.10:1828-1836 O '63. (MIRA 17:3)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

IZYNEYEV, A.A.; KORSHAK, V.V.; FRUNZE, T.M.; ALDAROVA, N.Sh.; KURASHEV, V.V.

Preparation of polymers by polycyclization reaction. Report No.3: Properties of polybenzimidazole obtained from 3,3-diaminobenzidine and diphenyl ester of sebacic acid. Izv. AN SSSR. Ser. khim. no.11:2019-2023 N '63. (MIRA 17:1)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

AUTHOR: Korshak, V. V.; Frunze, T. M.; Kurashev, V. V.; Kotrelev, G. V.

TITLE: Heterochain polyamides. 34. Synthesis of polyamides with active functional groups in macromolecules

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 5, no. 7, 1963, 979-985

TOPIC TAGS: polyamides, polycondensation, interfacial polycondensation, macromolecules, functional groups

ABSTRACT: Studies were conducted on the polycondensation reaction of 1,3-diaminopropane-2-ol (DAPO) with sebacic acid as well as with sebacyl and terephthalyl chlorides. The polyamide obtained by heating a mixture of DAPO with sebacic acid for one hour at not over 200C yielded a product of low molecular [illegible] any further increase in temperature or heating time resulted in the formation of a tridimensional, nonfusable, brittle mass, soluble only in [illegible] acid. On the other hand, interfacial [illegible] terephthalyl chlorides in a [illegible] polymers of substantially higher viscosity. The [illegible]

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of DAPO being 0.25 Molar. An excess of DAPO is needed, since it acts as an acceptor for the hydrogen chloride formed during the reaction. The optimal yield of the polymer amounted to 80%, as against 63% where sodium hydroxide was used as acceptor. Mixed polyamides were produced by reacting DAPO with sebacyl chloride and hexamethylenediamine. Here, too, the use of sodium hydroxide resulted in products of a higher melting point and lower solubility. Orig. art. has: 6 diagrams and 3 tables.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy AN SSSR (Institute of Elementoorganic Compounds, AS USSR

SUBMITTED: 06Dec61	DATE ACQ: 08Aug63	ENCL: 00
SUB CODE: 00	NO REF SOV: 005	OTHER: 001

Card 2/2

KORSHAK, V.V.; FRUNZE, T.M.; PAVLOVA, S.A.; KURASHEV, V.V.

Heterochain polyamides. Part 35: Change in the rate of interfacial condensation and of fractional composition of polyhexamethyleneadipamide. Vysokom.soed. 5 no.8:1130-1134 Ag '63. (MIRA 16:9)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Adipamide) (Polymerization)

MEDVED', T.Ya.; FRUNZE, T.M.; KHU CHIN-MEY; KURASHEV, V.V.; KORSHAK, V.V.; KABACHNIK, M.I.

Organophosphorus polyamides based on methyldi-(m-aminophenyl)phosphine oxide. Vysokom.soed. 5 no.9:1309-1314 S '63. (MIRA 17:1)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

KORSAHK, V.V.; FRUNZE, T.M.; KURASHEV, V.V.; IZYNEYEV, A.A.

Reactions involved in the formation of polybenzimidazoles.
Dokl.AN SSSR 149 no.1:104-106 Mr '63. (MIRA 16:2)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
2. Chlen-korrespondent AN SSSR (for Korshak).
(Benzimidazole) (Polymerization)

ACCESSION NR: AP4042186 S/0190/64/006/007/1251/1255

AUTHOR: Korshak, V. V.; Frunze, T. M.; Kurashev, V. V.; Lopatina, G. P.

TITLE: Synthesis of certain polybenzimidazoles with a single or mixed single component, and study of their properties

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 7, 1964, 1251-1255

TOPIC TAGS: copolymer, polybenzimidazole, infusible copolymer, insoluble copolymer, heat resistant copolymer

ABSTRACT: New polybenzimidazoles with a single or mixed second component have been synthesized, and their properties have been studied. These organic copolymers have an unusually high heat resistance. Polybenzimidazoles with a single second component were prepared by polycondensation of 3,3'-diaminobenzidine (DAB) with diphenyl esters of isophthalic acid, terephthalic acid, or bis(p-carboxyphenyl)methylphosphine. The first two polybenzimidazoles proved to be infusible and insoluble. The P-containing polybenzimidazole

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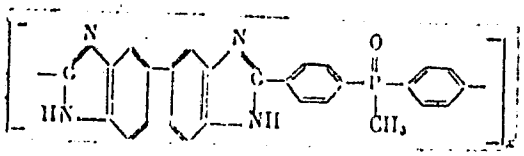
ACCESSION NR: AP4042186



is also infusible, but dissolves in formic and sulfuric acids. An attempt to synthesize an F-containing copolymer by polycondensation of DAB with the diphenyl ester of perfluoroterephthalic acid failed as a result of the decomposition of the polycondensation product. The thermomechanical curves of the synthesized products are given in Fig.1a of the Enclosure. Polybenzimidazoles with a mixed second component were prepared from DAB and mixtures of diphenyl esters of 1) terephthalic and isophthalic acids, 2) sebacic and isophthalic acids, and 3) sebacic and terephthalic acids. The thermomechanical curves of some of the products are given in Fig. 1b. Polybenzimidazoles containing mixed aromatic second components are infusible and are soluble only with difficulty; their solubility depends on the composition of the initial mixture. Polybenzimidazoles containing both aromatic and aliphatic groups exhibit a better solubility, which increases with an increase in aliphatic component content. Orig. art. has: 1 figure and 4 tables.

Card 2/4

ACCESSION NR: AP4042186

ASSOCIATION: Institut elementoorganicheskikh soyedinenly AN SSSR (Institute of Organoelemental Compounds, AN SSSR)

SUBMITTED: 25Jul63 ATD PRESS: 3054 ENCL: 01

SUB CODE: OC NO REF SOV: 001 OTHER: 004

Card 3/4

ACCESSION NR: AP4042186 ENCLOSURE: 01

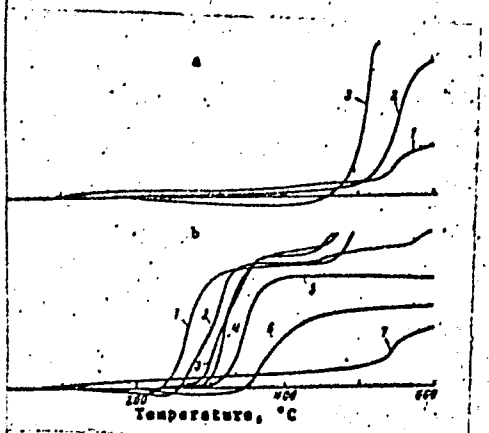


Fig. 1. Thermomechanical properties of: a) polybenzimidazoles prepared from 3,3'-diaminobenzidine and diphenyl esters of isophthalic (1) and terephthalic (2) acids or bis(-p-carboxyphenyl)methylphosphine oxide (3); b) polybenzimidazoles, prepared from 3,3'-diaminobenzidine and diphenyl esters of sebacic and terephthalic acids

Molar ratio of diphenyl ester of sebacic acid to diphenyl ester of isophthalic acid: 1 - 1.0:0.0; 2 - 0.8:0.2; 3 - 0.6:0.4; 4 - 0.5:0.5; 5 - 0.4:0.6; 6 - 0.2:0.8; 7 - 0.0:1.0.

4/4

Card

ACCESSION NR: AP4043775 S/0190/64/006/008/1394/1397

AUTHOR: Korshak, V. V., Manucharova, I. F., Frunze, T. M., Kurashev, V. V.

TITLE: Investigation of the thermal stability of some homogeneous and mixed polybenzimidazoles by the method of differential thermal analysis

SOURCE: Vy*sokomolekulyarny*ye soyedineniya, v. 6, no. 8, 1964, 1394-1397

TOPIC TAGS: thermal stability, polybenzimidazole, differential thermal analysis, mixed polymer, thermogram

ABSTRACT: Using the gravimetric method described in an earlier paper, the authors investigated the thermal stability of ten polybenzimidazoles prepared from 3,3'-diaminobenzidine and the diphenylesters of either bis-(p-carboxyphenyl) methylphosphine oxide or terephthalic, isophthalic and sebacic acid. The weight loss of the polymers, heated in a stream of nitrogen to 550, 600 and 650C, the temperature of incipient decomposition and the temperature of steep weight loss are tabulated. As shown by Fig. 1. in the Enclosure, all these polymers, especially those of homogeneous composition, exhibited a high degree of thermal resistance, showing the first signs of decomposition at temperatures between 400 and 520C. The relationships between thermal behavior and polymer composition are

Card 1/3

ACCESSION NR: AP4043775

discussed at length. Orig. art. has: 1 table and 2 figures.

ASSOCIATION: Affiliation: Institut elementoorganicheskikh soyedineniy AN SSSR (Institute of Organometallic Compounds, AN SSSR); Institut obshchey i neorganicheskoy khimii imeni Kurnakova AN SSSR (Institute of General and Inorganic Chemistry, AN SSSR)

SUBMITTED: 25Jul63 ENCL: 01

SUB CODE: GC NO REF SOV: 003 OTHER: 001

ACCESSION NR: AP4043775 ENCLOSURE: 01

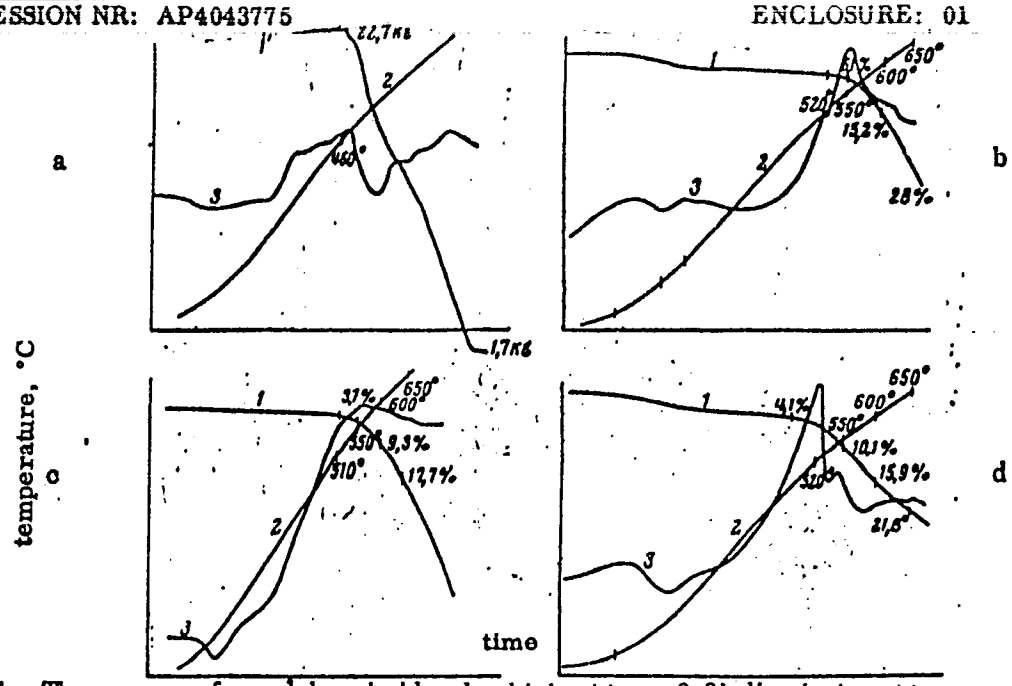


Fig. 1. Thermogram for polybenzimidazole obtained from 3,3'-diaminobenzidine and the diphenyl ester of: a. sebacic acid; b. isophthalic acid; c. terephthalic acid; d. bis-(p-carboxyphenyl)-methylphosphine oxide.

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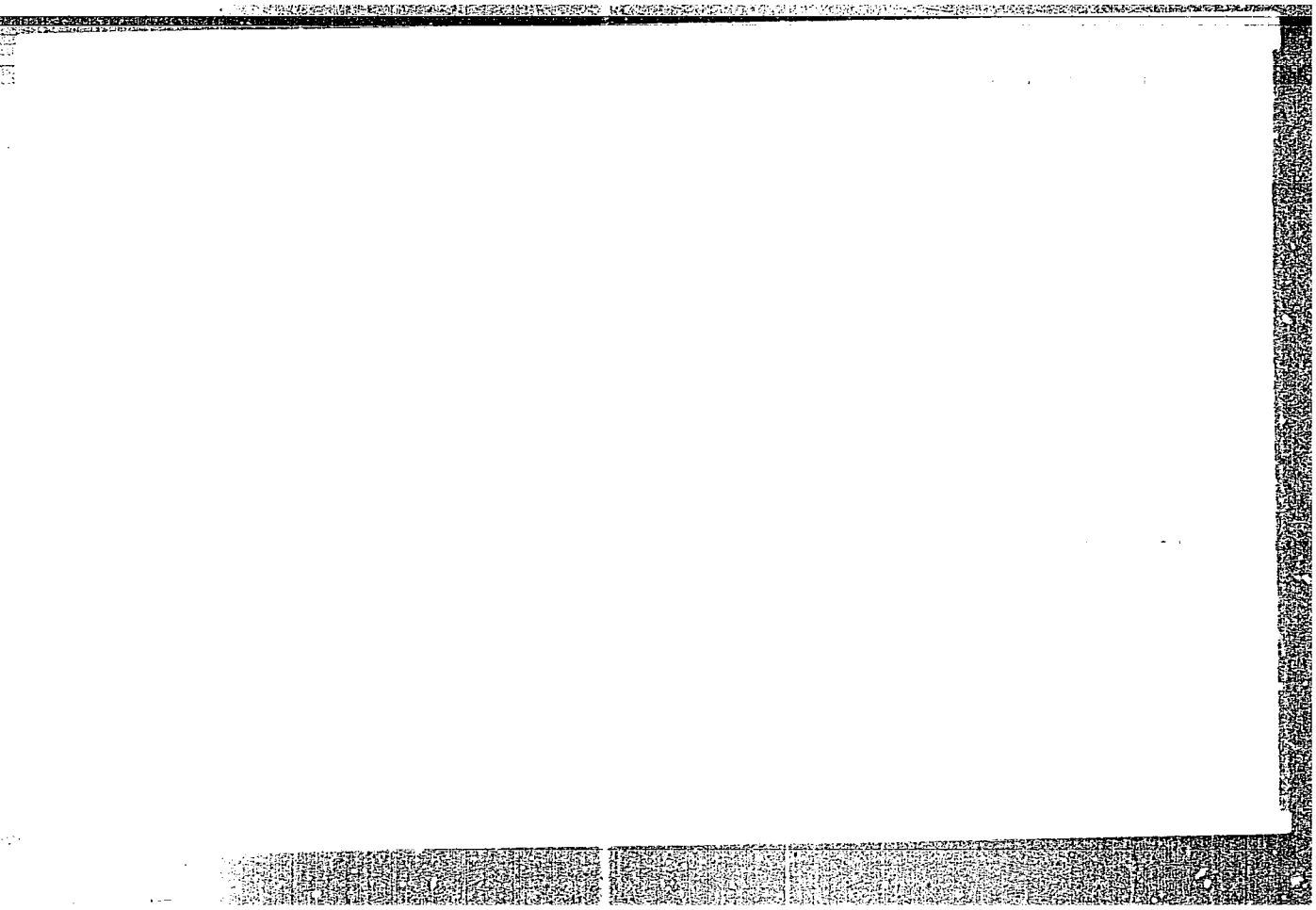

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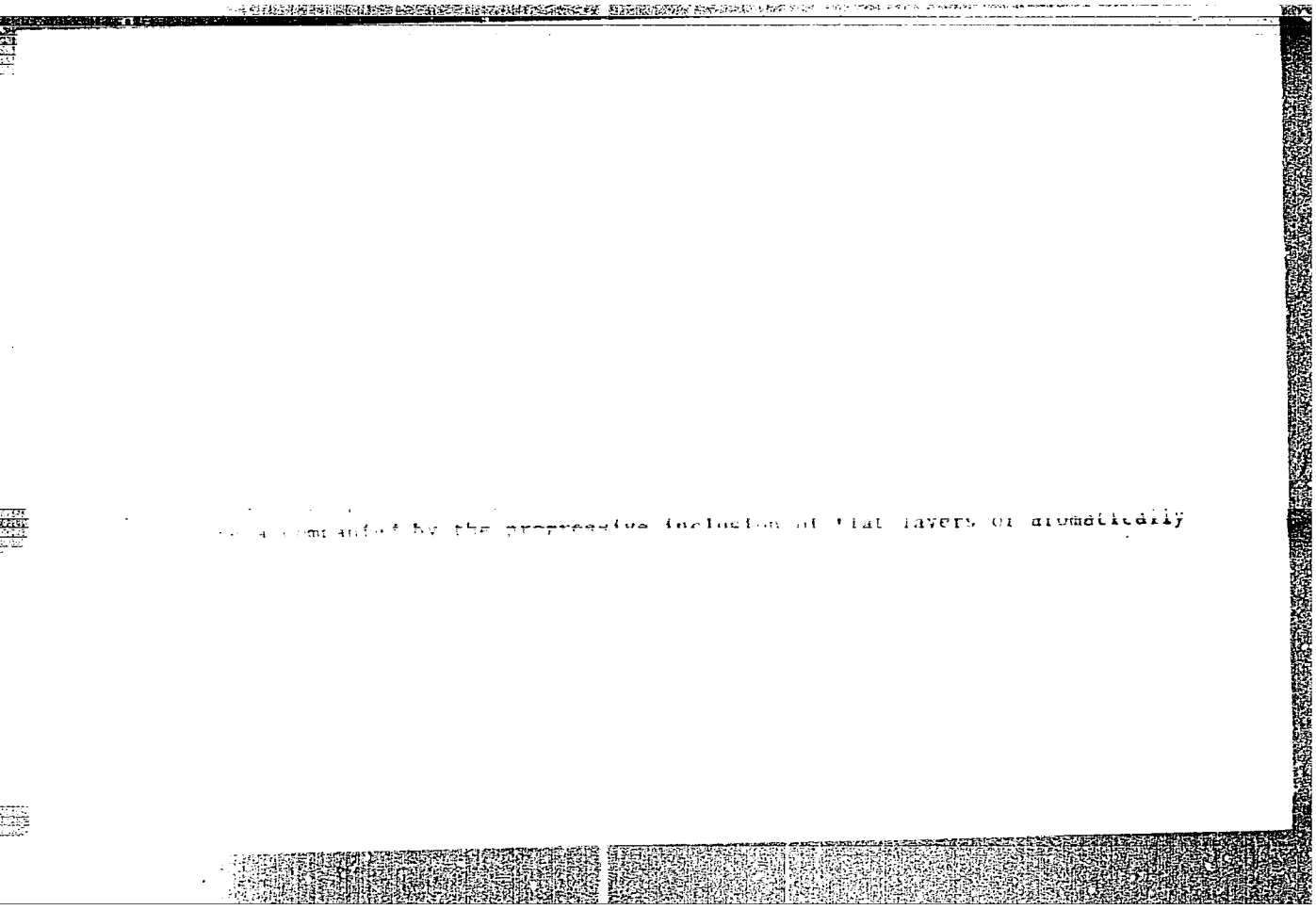

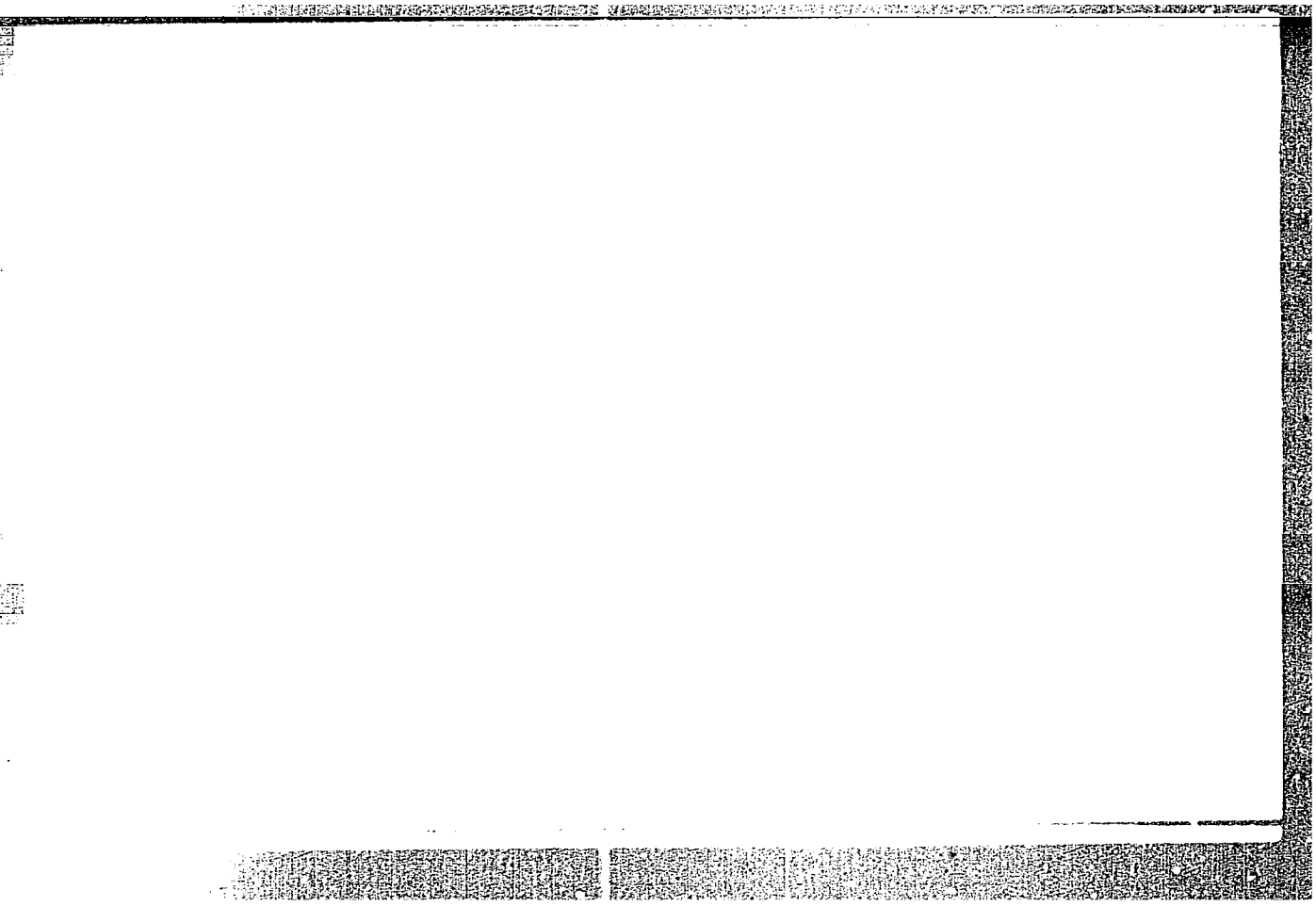

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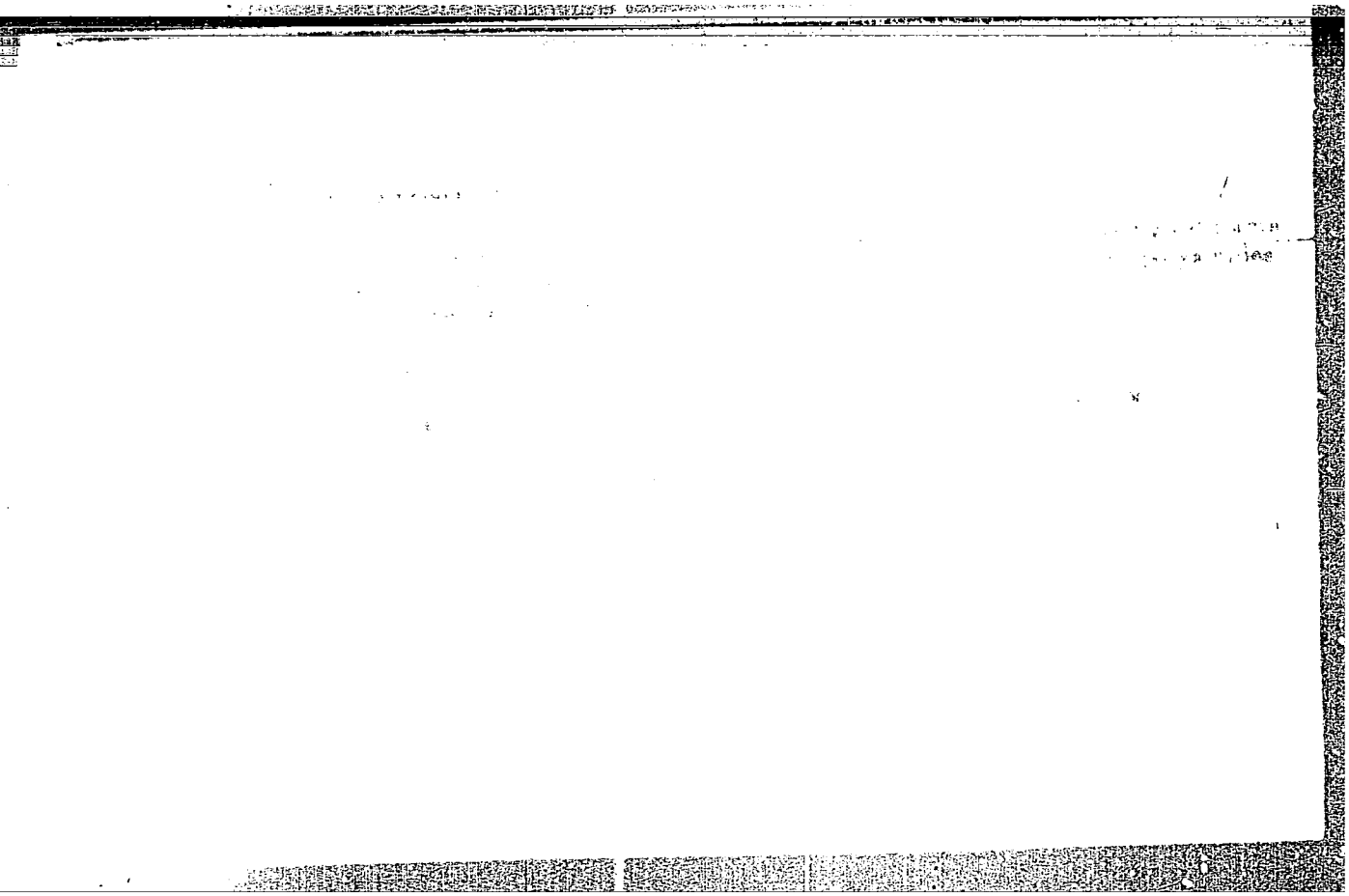
TITLE: Synthesis of certain phosphorus-containing monomers



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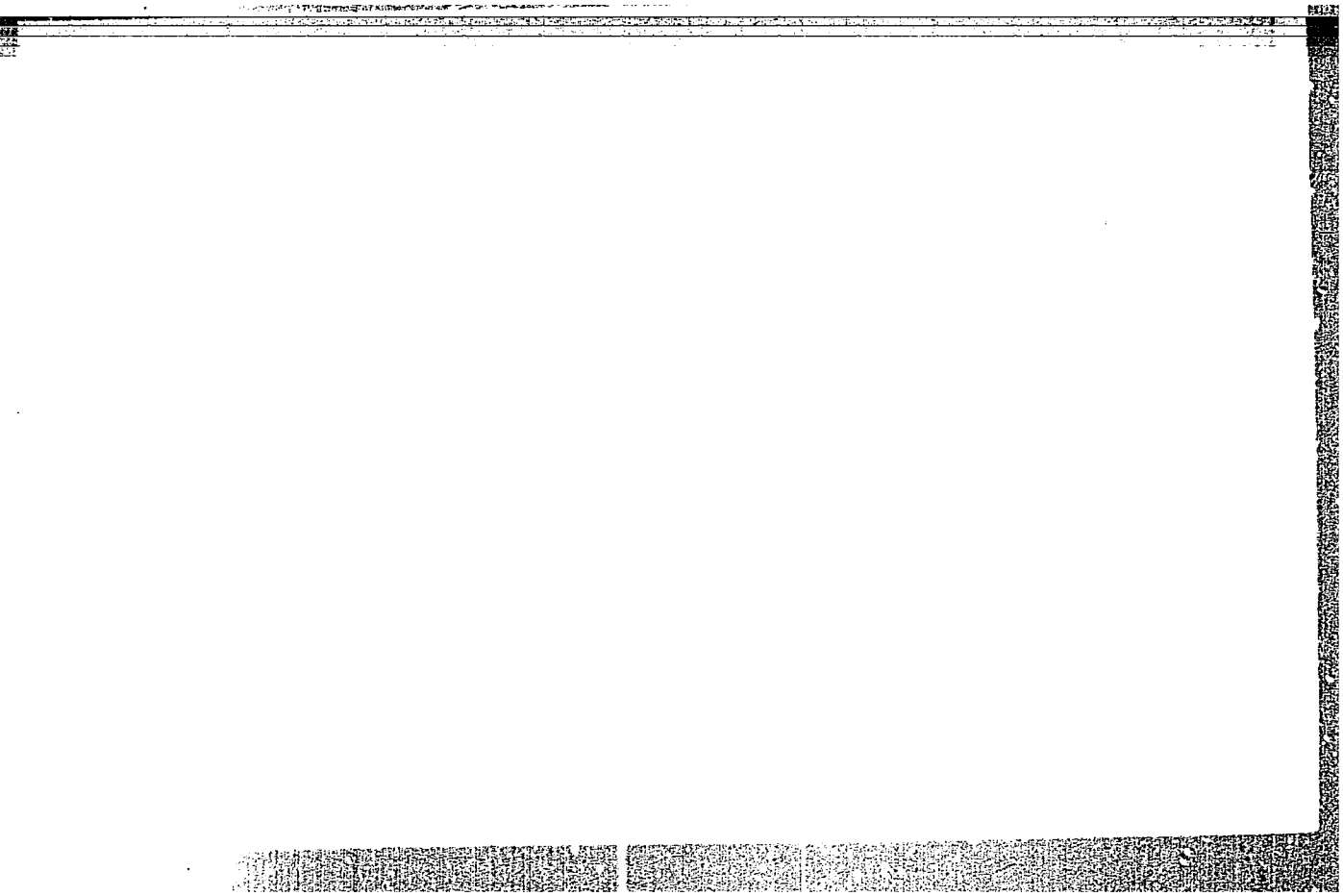

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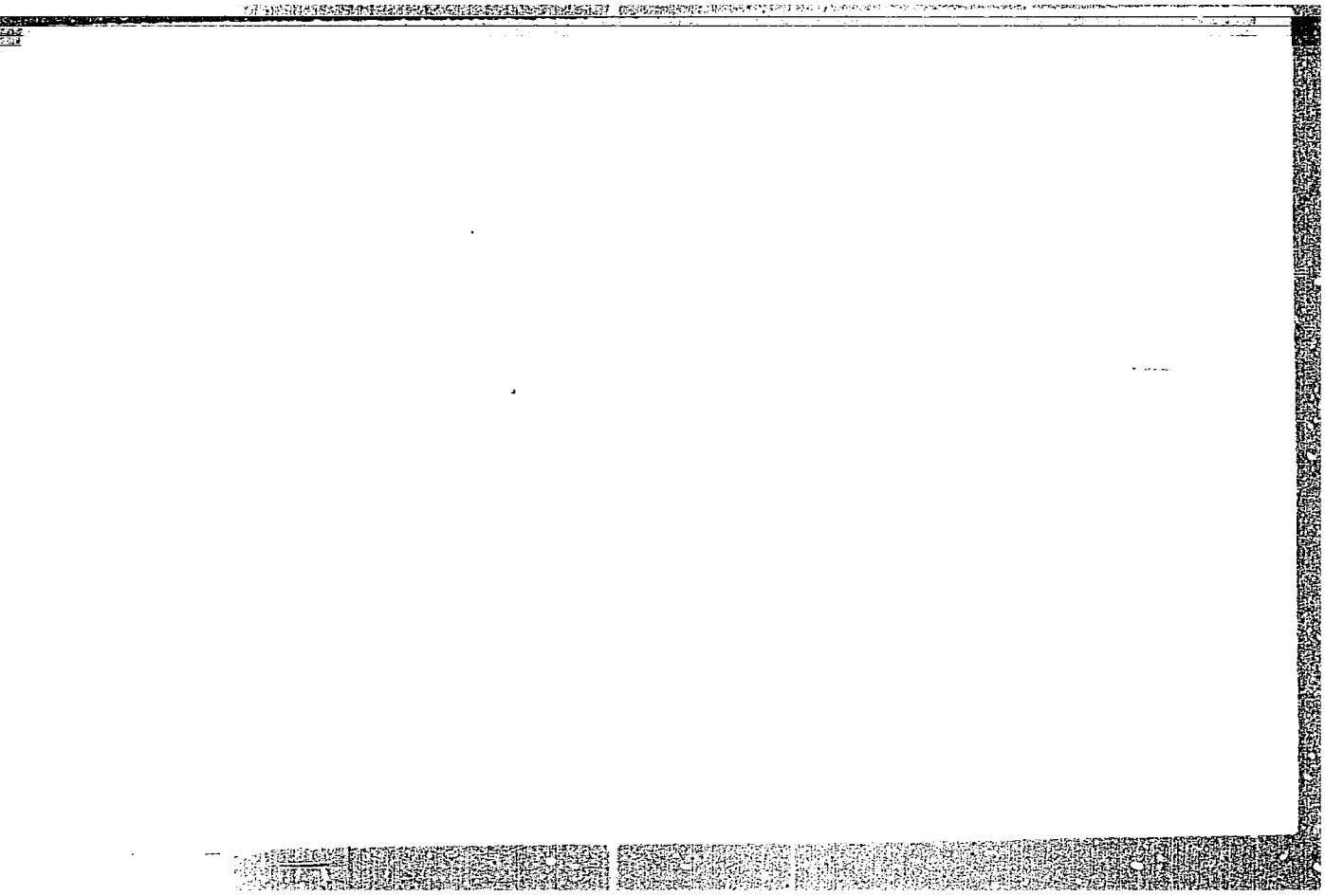

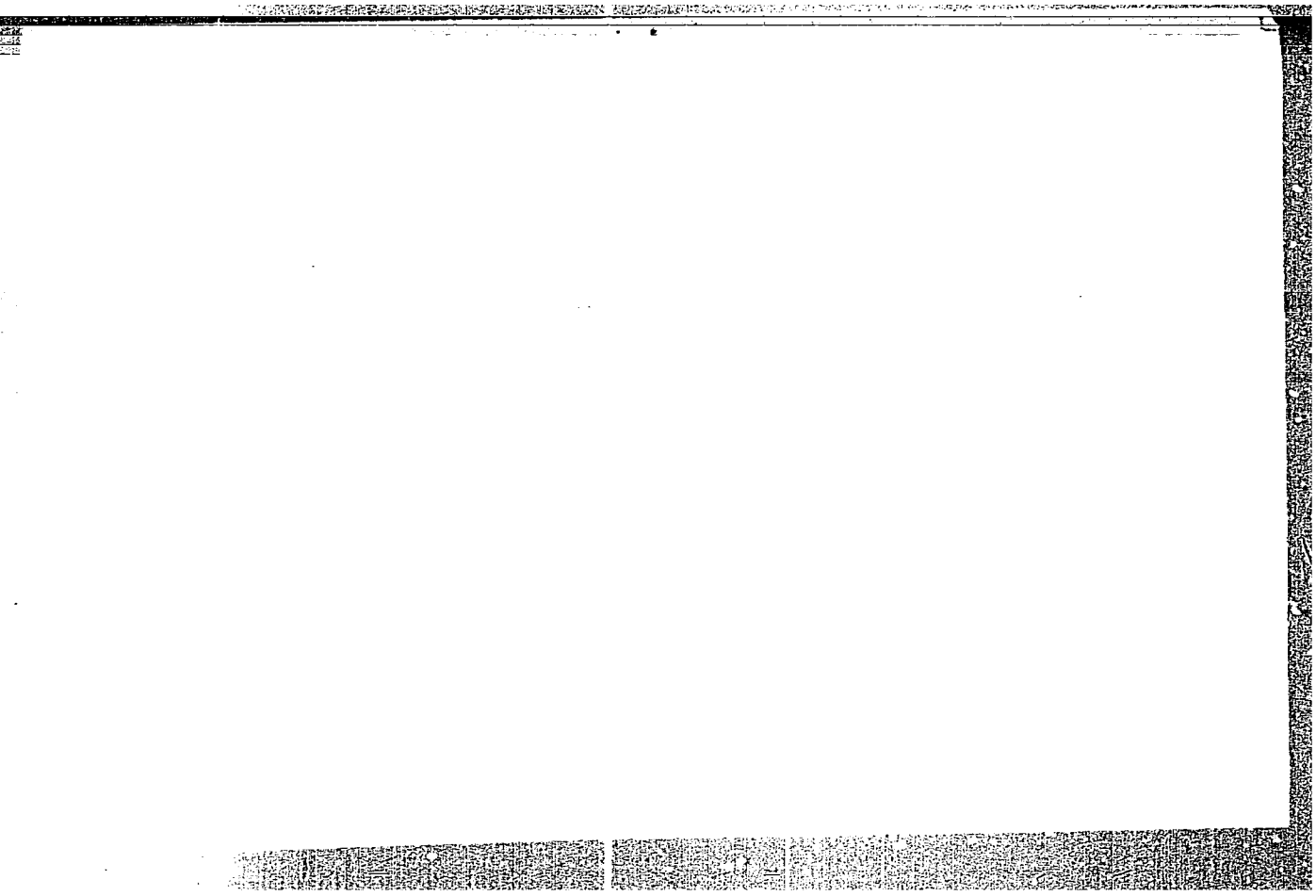

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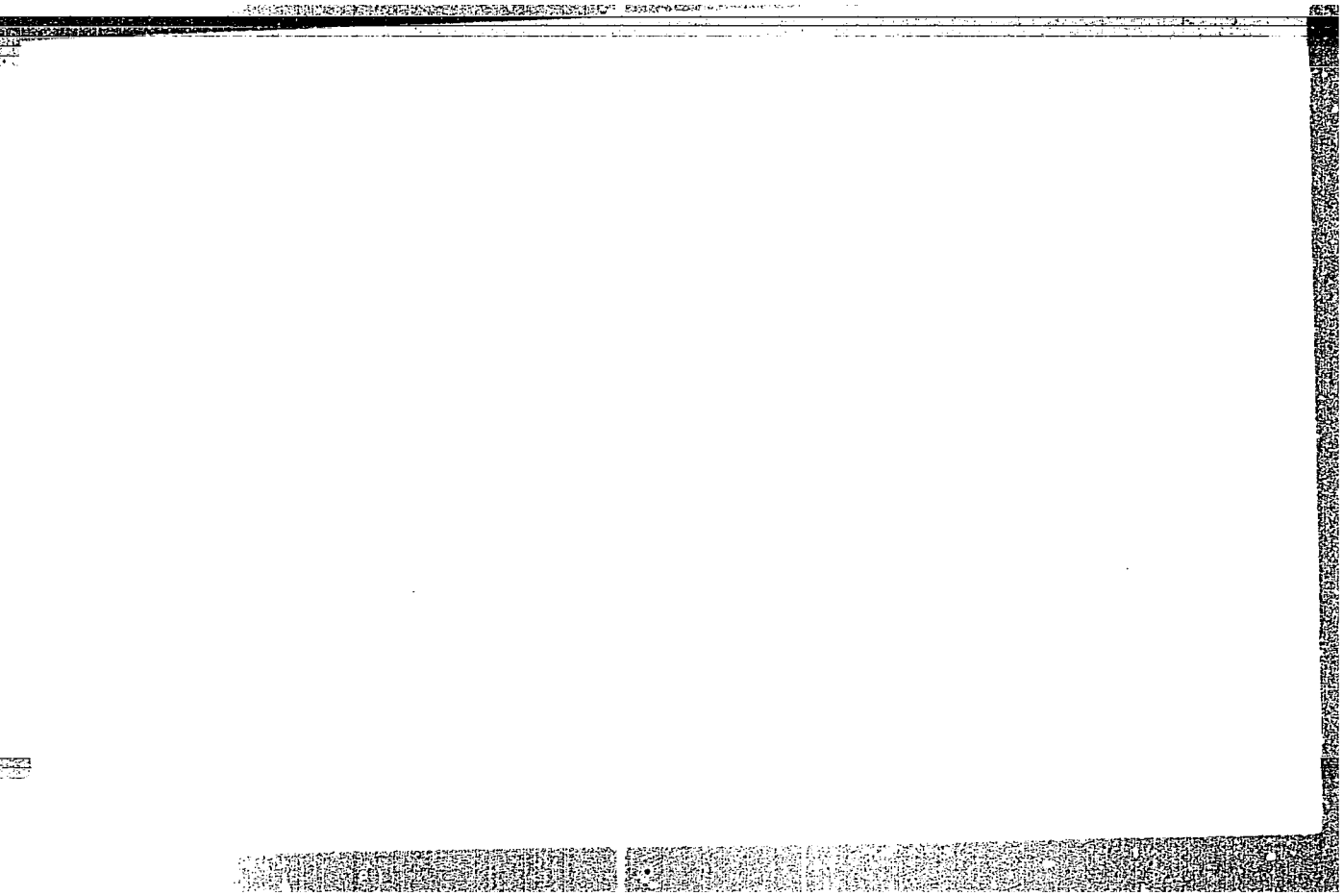

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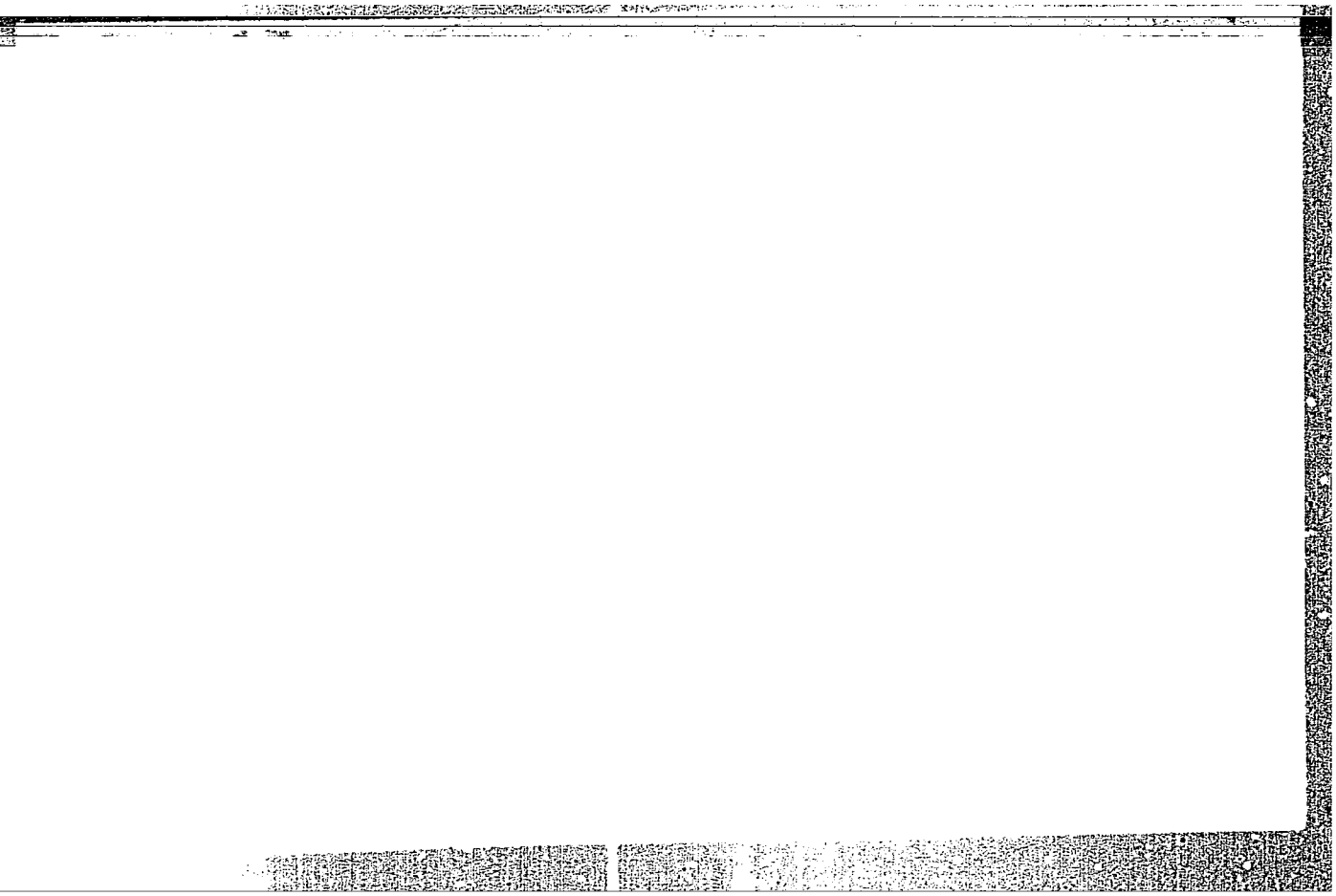

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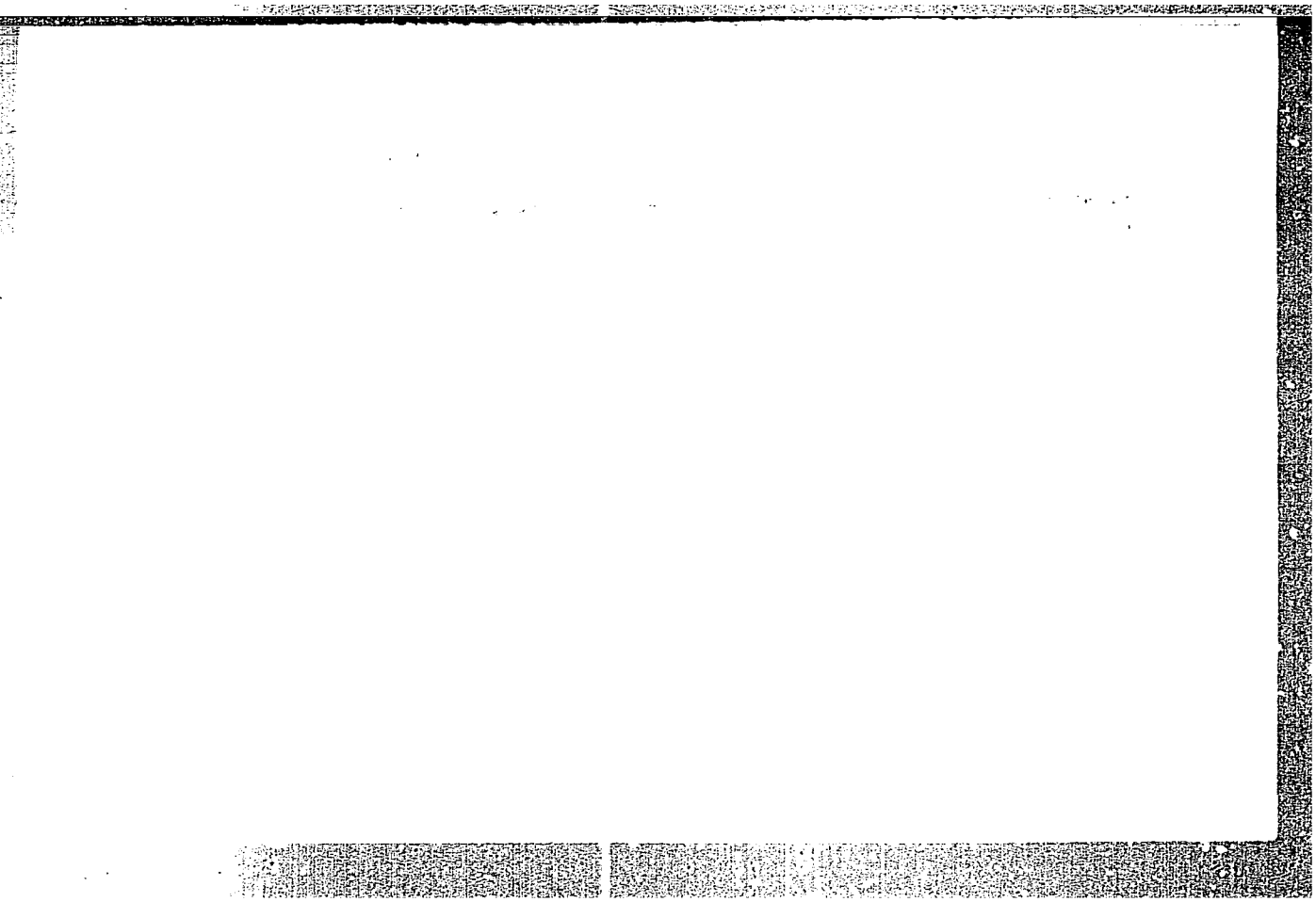
[illegible]

Graft copolymerization of styrene with [illegible] in bl[illegible].
Izv. AN SSSR.Ser.khim. no.10:1860-1866 '65.

(MIRA 18:10)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.

graft copolymer, styrene copolymer, caprolactam copolymer, block
polymerization, methacryloylcaprolactam



APPROVED FOR RELEASE: 08/23/2000 CIA-RDP86-00513R000927620005-0"

L 8152-66 EWT(m)/EWP(j)/T RPL WW/RM

ACC NR: AP5027689 SOURCE CODE: UR/0062/65/000/010/1860/1866

AUTHOR: Baranov, Ye. L.; Frunze, T. M.; Kurashev, V. V.

ORG: Institute of Organo-elemental Compounds, Academy of Sciences SSSR (Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR)

TITLE: Graft copolymerization of styrene with epsilon-caprolactam in bulk

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 10, 1965, 1860-1866

TOPIC TAGS: copolymerization, polymerization rate, polymerization kinetics, block copolymer, radical polymerization, catalytic polymerization

ABSTRACT: Two stage graft copolymerization of epsilon-caprolactam with styrene to form copolymers containing 5-50% styrene was studied. Radical copolymerization of styrene with N-methacryloylcaprolactam in epsilon-caprolactam solution to form the macromolecular initiator is effected in the first stage. Epsilon-caprolactam is grafted onto the macromolecular initiator in the second stage upon addition of sodium-caprolactam as the second component of the catalyst system. In order to increase the amount of styrene in the graft copolymer the

UDC: 542.952

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L 3152-66

ACC NR: AP5027689

amount of the catalyst system must be increased proportionally; 0.2 mol% of catalyst is optimum for polymerization of the caprolactam alone. Copolymers formed using less catalyst have large (over 10%) amounts of water-soluble products. The graft copolymers are insoluble cross-linked products which swell in cresol and concentrated sulfuric acid. The reaction mechanism of the cross-link formation is to be reported later. Orig. art. has: 4 figures, 3 tables and 1 equation.

SUB CODE: MT, OC, GC/ SUBM DATE: 23Feb65/ ORIG REF: 000/ OTH REF: 008

nw

Card 2/2

L 66537-66 EWT(m)/EWP(j)/T/ETC(m)-6 IJP(c) WW/RM

ACC NR: AP6010118 (A) SOURCE CODE: UR/0190/66/008/003/0519/0525

AUTHOR: Korshak, V. V.; Frunze, T. M.; Kurashev, V. V.; Shleyfman, R. B.; Danilevskaya, L. B.

55
8

ORG: Institute of Organoelemental Compounds, AN SSSR (Institut elementoorganicheskikh soyedineniy AN SSSR)

TITLE: The use of a trifunctional activator for branched-polyamide synthesis

SOURCE: Vysokomolekulyarnyye soyedineniya, v. 8, no. 3, 1966, 519-525

TOPIC TAGS: polymerization initiator, polyamide, polymerization, polymer, elasticity, impact strength, caprolactam, lactam

ABSTRACT: N, N', N"-trimesinoyl-ter-caprolactame has been synthesized and was shown to be an effective activator of anionic polymerization of ε-caprolactame, making it possible to produce insoluble polymers. The physical and mechanical properties of these polyamides were analyzed. It was found that they have higher elasticity and impact strength properties than those of linear polyamides prepared in the presence of monofunctional activators. It is shown that the use of a trifunctional activator leads to the formation of branched and crosslinked polyamides. Orig. art. has: 4 figures and 2 tables. [Based on authors' abstract.] [NT]

SUB CODE: 07/ SUBM DATE: 10Apr65/ ORIG REF: 005/ OTH REF: 005/

Card 1/1 BLG UDC: 541.64+678.675

KURASHEVA, D.B., kand.med.nauk

Use of peloidin in Botkin's disease. Vrach.delo no.8:867 Ag '59.
(MIRA 12:12)

1. Vtoraya Moskovskaya klinicheskaya infekt[illegible]aya bol'nitsa na Sokolinoy gore.
(EARTHS, MEDICAL AND SURGICAL USES OF) (HEPATITIS, INFECTIOUS)

BREMENER, S.M.; GORDON, R.I.; KIRZHNER, L.S.; KURASHEVA, D.B.; RASKIN, I.M. (Moskva)

Use of vitamin B_{12} in Botkin's disease. Klin.med. 38 no.12:100-106 D '60. (MIRA 14:2)

1. Iz klinicheskogo otdela Gosudarstvennogo nauchno-issledovatel'skogo instituta vitaminologii Ministerstva zdravookhraneniya SSSR (rukovoditel' - deystvitel'nyy chlen AMN SSSR prof. M.S. Vovsi [deceased]) i Gorodskoy infektsionnoy klinicheskoy bol'nitsy No.2 (zaveduyushchaya chetvertym korpusom D.B. Kurasheva).
(CYANOCOBALAMINE) (HEPATITIS, INFECTIOUS)

KURASHEVA, I.D.; VISHNYAKOVA, T.P.

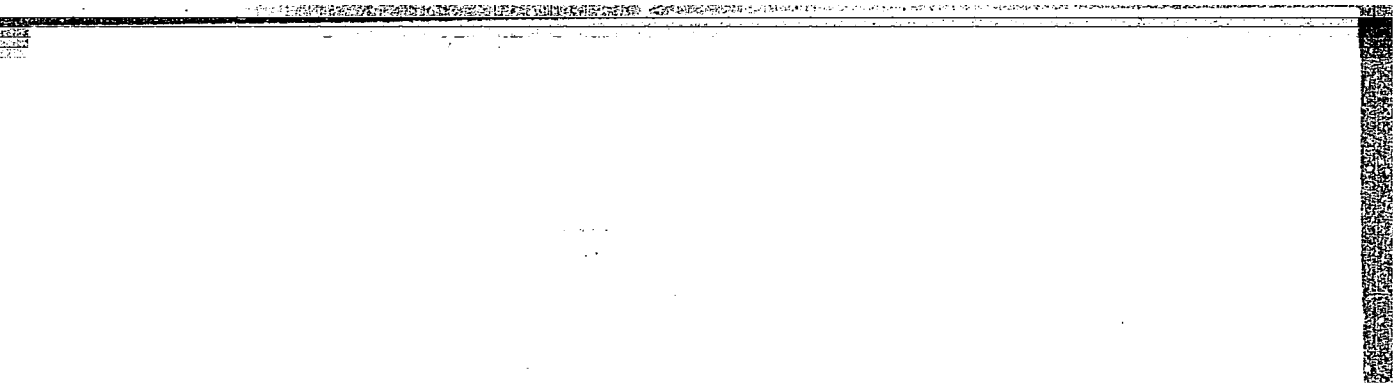
Cyclic compounds with conjugate double bonds. Trudy MIMKHIGP no.37: 125-129 '62. (MIRA 17:3)

PAUSHKIN, Ya.M.; VISHNYAKOVA, T.P.; SOKOLINSKAYA, T.A.; PATALAKH, I.I.; MACHUS, F.F.; KURASHEVA, I.D.

New iron-containing monomers and polymers form five-membered naphthenes. Trudy MINKHiGP no.44:15-26 '63. (MIRA 18:5)

FAUSTKIN, Ya.M., VIZNYAKOVA, T.P., KRASNOVA, L.F.

Preparation of acetylcyclopentadienylmanganesetricarbonyl.
Zhur. ob. khim. 35 no.9:1682-1684 S '65. (MIRA 18:10)



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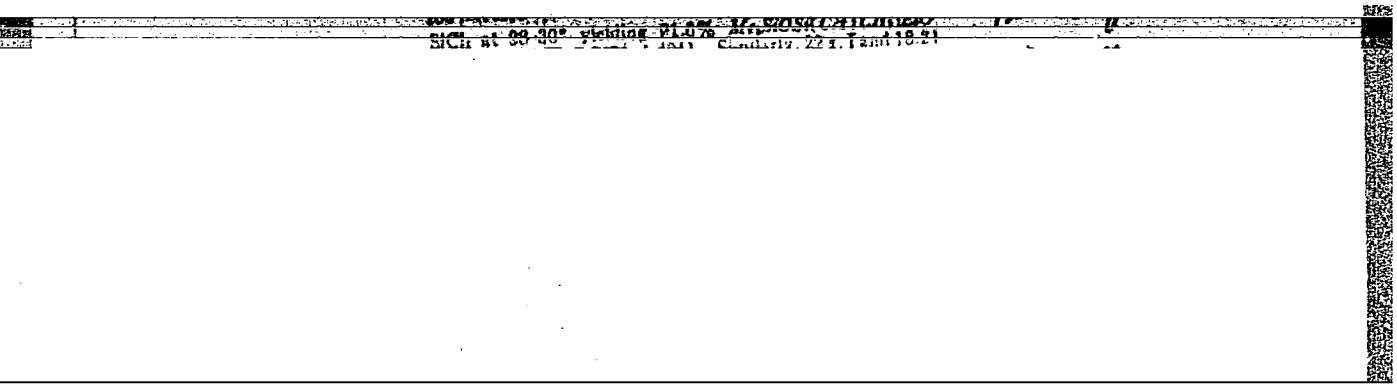

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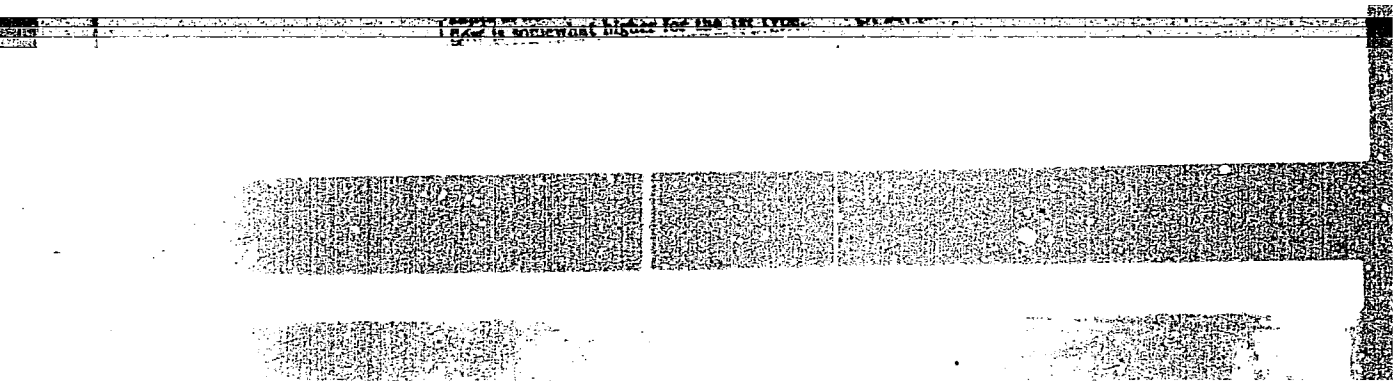

5(3)
AUTHORS: Andrianov, K. A., Corresponding Member AS USSR, Kurasheva, N. A. SOV/20-126-5-23/69

TITLE: Synthesis of Cyclic Dimethyl Siloxanes, Containing Triethyl Siloxane Groups (Sintez tsiklicheskikh dimetilsiloksanov, soderzhashchikh trietilsiloksanovyye gruppy)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 5, pp 997 - 1000 (USSR)

ABSTRACT: The compounds, mentioned above, though containing other than triethyl siloxane groups, have been synthesized and described in various reports (Refs 1-7). In this report the synthesis of such compounds having a structure of $(C_2H_5)_3SiOSiCl_2$, and their transformation into cyclic-compounds by means of the co-hydrolysis - reaction with dimethyl-dichloro silane, is described. The synthesis of the compounds, mentioned last in the title, was carried out according to reference 8. There were ethyl-(triethyloxy)-dichloro silane; methyl-(triethyl-siloxy)-dichloro silane, and phenyl-(triethyl-siloxy)-dichloro silane. The structure of these compounds was not only confirmed by analysis data, but also by their transformation into acetoxy-

Card 1/2

Synthesis of Cyclic Dimethyl Siloxanes, Containing Triethyl Siloxane Groups

30V/20-126-5-23/69

-derivates (see schedule). Table 1 puts forth the properties of the newly-produced compounds. The cyclic dimethyl siloxane containing triethyl siloxane groups were obtained by means of a co-hydrolysis reaction (see schedule). It was found that in the co-hydrolysis of methyl-(triethyl siloxy)-dichloro silane with dimethyl dichloro silane, chiefly tetramer triethyl-siloxy--hepta-methyl-tetra-siloxane is formed. A co-hydrolysis of the ethyl-(triethyl-siloxy)-dichloro-silane and phenyl-(triethyl--siloxy) dichloro silane with dimethyl-dichloro silane leads chiefly to the formation of trimers (Table2). The cyclic structure was not only confirmed by analysis but also by the infrared spectrum. There are 2 tables and 8 references, 2 of which are Soviet.

SUBMITTED: April 3, 1959

Card 2/2

5.3700B

69506
S/020/60/131/04/029/073
B011/B017

AUTHORS: Andrianov, K. A., Corresponding Member, AS USSR, Kurasheva, N. A.

TITLE: On the Reaction of Titanium Tetrachloride With Hexamethyldisiloxane

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 131, Nr 4, pp 825-826 (USSR)

TEXT: The experiments carried out by the authors have shown that the effect produced by titanium tetrachloride above 100° causes a rupture of the siloxane bond in hexamethyldisiloxane. In this connection, trimethylsiloxychloro derivatives of titanium are formed. If this reaction takes place at 120-200°, only trimethylchlorosilane and trimethylsiloxytrichlorotitanium (yield 69.8%) are formed (see Scheme). All efforts to obtain products of higher degrees of substitution (i.e. bis-(trimethylsiloxy)-dichlorotitanium) failed. The latter compound, however, was formed in a yield of 34.7% at 280-350° due to another reaction scheme (see this one). This indicates that the halogen on the titanium atom is replaced by the second siloxy group, probably due to the reaction of trimethylsiloxytrichlorotitanium with hexamethyldisiloxane. Experiments carried out with these two substances at 280-320° yielded bis-(trimethylsiloxy)-dichlorotitanium in a yield of 43.0% (see Scheme). The mechanism of rupture of siloxane bonds during the reaction mentioned in the title proceeds, according to the authors, in the following manner: the titanium atom in $TiCl_4$ is coordinated with the oxygen of hexamethyldisiloxane

Card 1/3

On the Reaction of Titanium Tetrachloride With Hexamethyldisiloxane

S/020/60/131/04/029/073
B011/B017

under formation of a transition complex (I). The further process is accompanied by the rupture of the siloxane bond due to the redistribution of the electron density. Titanium is added to oxygen, and trimethylchlorosilane and trimethylsiloxytrichlorotitanium (II) are formed. The addition of the second siloxy group to the titanium atom probably takes place through the coordination of the titanium atom of trimethylsiloxytrichlorotitanium with hexamethyldisiloxane (III). In the following, trimethylchlorosilane and bis-(trimethylsiloxy)-dichlorotitanium (IV) are formed. There are 6 references, 2 of which are Soviet.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental-organic Compounds of the Academy of Sciences, USSR)

69506

On the Reaction of Titanium Tetrachloride With Hexamethyldisiloxane

S/020/60/131/04/029/073
B011/B017

SUBMITTED: November 10, 1959

Card 3/3

86393

S/020/60/135/002/018/036
B016/B052

15.8116

AUTHORS: Andrianov, K. A., Corresponding Member of the AS USSR, and Kurasheva, N. A.

TITLE: The Reaction of Heterofunctional Condensation of Bis-(trimethylsiloxy) Titanium Dichloride With Phenyl-methyl Diethoxysilane

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 135, No. 2, pp. 316 - 319

TEXT: The authors studied the reaction of heterofunctional condensation between bis-(trimethylsiloxy) titanium dichloride and phenyl-methyl diethoxysilane at 150°C. They found that not ethyl chloride, but trimethyl silane chloride is split off under the formation of a polymer. The chemical composition of this polymer is given by equation I of the attached scheme. The polymer is easily soluble in benzene and toluene, highly elastic at room temperature, and becomes brittle (in thin filaments) under humid conditions. This reaction which differs from that of alkyl-(aryl)-halide silanes with alkyl-(aryl)-ethoxy silanes, was

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86393

The Reaction of Heterofunctional Condensation of Bis-(trimethylsiloxy) Titanium Dichloride With Phenyl-methyl Diethoxysilane

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thoroughly studied. It is shown that not only phenyl-methyl diethoxysilane but also dimethyl butoxysilane reacts with bis-(trimethylsiloxy) titanium dichloride to form trimethyl silane chloride instead of butyl chloride. The chemical composition of the resulting polymer indicates that the reaction described here is very complicated. Further experiments proved that the reaction is initiated by humid air reacting with bis-(trimethylsiloxy) titanium dichloride. Thus, HCl is split off (Scheme II (1)). The initial reaction product reacts with phenyl-methyl diethoxysilane while alcohol is separated. HCl reacts with the trimethyl siloxane group bound to titanium under the formation of trimethyl silane chloride (Scheme II (3)). Alcohol reacts with trimethyl silane chloride to form small amounts of trimethyl ethoxysilane (Scheme II (4-6)). The alcohol produced during the reaction reacts with HCl to form trimethyl silane chloride, trimethyl ethoxysilane, and the polymer. These reactions were confirmed by further experiments in which bis-(trimethylsiloxy) titanium dichloride was converted into a polymer even in the presence of small amounts of water (Scheme III (1-3)). There are 3 Soviet references.

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The Reaction of Heterofunctional Condensation of Bis-(trimethylsiloxy) Titanium Dichloride With Phenyl-methyl Diethoxysilane

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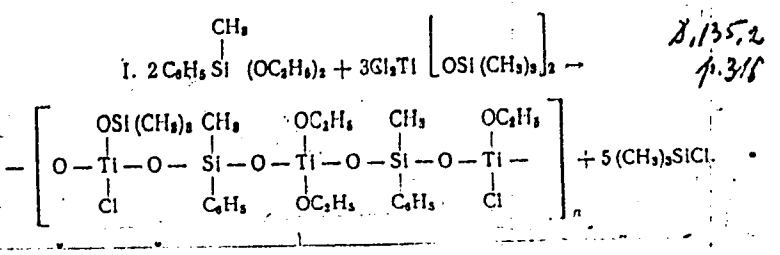

Scheme I

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II. 1. $[(CH_3)_2SiO]_2TiCl_2 + H_2O \rightarrow HCl + \left[[(CH_3)_2SiO]_2Ti\begin{matrix}Cl\\OH\end{matrix}\right]$.

Scheme II 1.

II. 2. $\left[[(CH_3)_2SiO]_2Ti\begin{matrix}Cl\\OH\end{matrix}\right] + C_2H_5O-\overset{CH_3}{\underset{C_6H_5}{Si}}-OC_2H_5 \rightarrow$

$\rightarrow (CH_3)_2SiO-\overset{Cl}{\underset{OSi(CH_3)_3}{Ti}}-O-\overset{CH_3}{\underset{C_6H_5}{Si}}-OC_2H_5 + C_2H_5OH.$

Scheme II 2.

II. 3. $(CH_3)_2SiO-\overset{Cl}{\underset{OSi(CH_3)_3}{Ti}}-O-\overset{CH_3}{\underset{C_6H_5}{Si}}-OC_2H_5 + HCl \rightarrow (CH_3)_2SiCl +$

$+\left[(CH_3)_2SiO-\overset{Cl}{\underset{OH}{Ti}}-O-\overset{CH_3}{\underset{C_6H_5}{Si}}-OC_2H_5\right]$.

Scheme II 3.

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4. $(CH_3)_3SiCl + C_4H_9OH \rightarrow (CH_3)_3SiOC_4H_9 + HCl$

5. $(CH_3)_3Si-O-Ti(Cl)(OSi(CH_3)_3)-O-Si(CH_3)(C_4H_9)-OC_4H_9 + C_4H_9OH \rightarrow$

$\rightarrow (CH_3)_3SiO-Ti(OC_4H_9)(OSi(CH_3)_3)-O-Si(CH_3)(C_4H_9)-OC_4H_9 + HCl$

Scheme II 4.

6. $\left[C_4H_9O-Si(CH_3)(C_4H_9)-O-Ti(Cl)(OSi(CH_3)_3)-OH\right] + C_4H_9O-Si(CH_3)(C_4H_9)-O-Ti(OC_4H_9)(OSi(CH_3)_3) \rightarrow$

$\rightarrow C_4H_9OH + C_4H_9O-Si(CH_3)(C_4H_9)-O-Ti(Cl)(OSi(CH_3)_3)-O-Si(CH_3)(C_4H_9)-O-Ti(OC_4H_9)(OSi(CH_3)_3)-O-Si(CH_3)_3$

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